

# **ADJUSTABLE LENGTH TUBE, ESPECIALLY FOR STICKS**

"Substitute Spec."  
"accepted"  
E.R. 12/17/07

This application is the national stage of PCT/EP03/03805 filed on April 11, 2003 and also claims Paris Convention priority of DE 202 07 54.0 filed on May 08, 2002.

## **BACKGROUND OF THE INVENTION**

The present invention relates to an adjustable-length tube, especially for sticks, in accordance with the independent claim.

In an adjustable-length tube such as is known from DE 297 06 849 U1, the spreading element is provided with a tapering inner cone oriented towards the inner tube, whereas the corresponding interior element that is provided with the outer cone is displaced towards the inner tube by the adjusting screw so that the spreading device can grab hold. In this manner, although the result is a relatively parallel clamping over the entire axial length of the spreading element, nevertheless it has been found that in response to impact-like stresses on the stick tip from the handle-side of an adjustable-length stick, an axial displacement of the outer tube with respect to the inner tube cannot always be avoided and especially not when, in the twisting motion, insufficient force has been applied for purposes of clamping.

Furthermore, from DE 297 08 829 U1, an adjustable-length tube is known, in which the interior element that is provided with the outer cone is formed by the forward free end of the adjusting screw, and the spreading element that is provided with the inner cone is moved axially on the adjusting screw. In this context, although the inner cone of the spreading element is opened towards the inner tube, nevertheless the same aforementioned disadvantages arise here if the spreading element is axially fixed in the spread-apart state. In this case as well, a relative motion between the outer tube and the spreading element can occur.

The objective of the present invention is to create an adjustable-length tube, especially for sticks, of the species cited above, which, in response to impact-like axial stresses, continues to clamp rather than slide or give way.

## **SUMMARY OF THE INVENTION**

The features indicated in the independent claims are put forward to achieve this objective in an adjustable-length tube, especially for sticks, of the aforementioned kind.